

What is claimed is:

1. A program interface object (PIO) for representing a television program within an interactive television system, the program interface object comprising:

- 5 a plurality of attributes carrying information about the television program;  
a plurality of user-selectable actions performable by the interactive television system in connection with the television program; and  
a visual indicator displayable in a graphical user interface to facilitate user interaction with the program interface object.

10 2. The PIO of claim 1, wherein the visual indicator comprises one of a graphical icon, an animated image, a video clip, and a text description.

3. The PIO of claim 1, further comprising:  
15 an audible indicator capable of being played back by the interactive television system.

4. The PIO of claim 1, wherein at least one of the user-selectable actions comprises program code executable by the interactive television system in response  
20 to a user selection.

5. The PIO of claim 4, wherein the program code is substantially machine-independent.

6. The PIO of claim 5, wherein the PIO comprises one of a JavaBean object and a Distributed Component Object Model (DCOM) object.

7. The PIO of claim 1, wherein at least one attribute comprises a title of  
5 the television program.

8. The PIO of claim 1, wherein at least one attribute comprises a starting time of the television program.

10 9. The PIO of claim 1, wherein at least one attribute comprises a running time of the television program.

10. The PIO of claim 1, wherein at least one attribute comprises a description of the television program.

15 11. The PIO of claim 1, wherein at least one attribute comprises an indication of a channel on which the television program is broadcast.

12. The PIO of claim 1, wherein at least one attribute comprises a storage  
20 location of the television program.

13. The PIO of claim 1, wherein at least one attribute comprises an alternative language version of another attribute.

14. The PIO of claim 1, wherein at least one user-selectable action is configured to display at least one attribute of the PIO using the interactive television system.

5 15. The PIO of claim 1, wherein at least one user-selectable action is configured to record the television program within the interactive television system.

16. The PIO of claim 1, wherein at least one user-selectable action is configured to display the television program using the interactive television system.

10 17. A method for managing television programs received by an interactive television system, the method comprising:  
providing, for each television program, a program interface object (PIO)  
comprising a plurality of attributes carrying information about the television program,  
15 a plurality of user-selectable actions performable by the interactive television system in connection with the television program, and a visual indicator displayable in a graphical user interface to facilitate user interaction with the PIO;

displaying one or more visual indicators corresponding to PIOs;  
receiving a user selection of a visual indicator corresponding to a PIO;  
20 receiving a user selection of an action associated with the selected PIO; and  
executing the selected action within the interactive television system.

18. The method of claim 17, further comprising:  
displaying, in response to a user selection of a visual indicator, a list of user-  
25 selectable actions associated with the selected PIO.

19. The method of claim 18, wherein the list is displayed in a context-sensitive menu associated with the visual indicator of the selected PIO.

5           20. The method of claim 17, wherein displaying one or more visual indicators comprises:  
filtering an initial set of PIOs according to user-specified filtering criteria; and  
displaying visual indicators of the PIOs satisfying the filtering criteria.

10           21. The method of claim 17, further comprising:  
receiving at least one PIO from a remote system.

            22. The method of claim 17, further comprising:  
transmitting at least one PIO to a remote system in response to a user  
15   command.

            23. The method of claim 21, further comprising:  
modifying at least one attribute of a PIO in response to a schedule change.

20           24. The method of claim 17, wherein at least one visual indicator comprises one of a graphical icon, an animated image, a video clip, and a text description.

            25. The method of claim 17, wherein at least one PIO includes an audible  
25   indicator, the method further comprising:

playing back the audible indicator using the interactive television system.

26. The method of claim 17, wherein at least one user-selectable action comprises program code executable by the interactive television system in response to a user selection.

27. The method of claim 26, wherein the program code is substantially machine-independent.

28. The method of claim 27, wherein at least one PIO comprises one of a JavaBean object and a Distributed Component Object Model (DCOM) object.

29. The method of claim 17, wherein at least one attribute comprises a title of a television program.

30. The method of claim 17, wherein at least one attribute comprises a starting time of a television program.

31. The method of claim 17, wherein at least one attribute comprises a running time of a television program.

32. The method of claim 17, wherein at least one attribute comprises a description of a television program.

33. The method of claim 17, wherein at least one attribute comprises an indication of a channel on which a television program is broadcast.

34. The method of claim 17, wherein at least one attribute comprises a  
5 storage location of a television program.

35. The method of claim 17, wherein at least one attribute comprises an alternative language version of another attribute.

10 36. The method of claim 17, wherein at least one user-selectable action is configured to display an attribute of the selected PIO using the interactive television system.

37. The method of claim 17, wherein at least one user-selectable action is  
15 configured to record a television program corresponding to the selected PIO within the interactive television system.

38. The method of claim 37, further comprising:  
recording the television program at a time indicated by an attribute of the  
20 selected PIO.

39. The method of claim 17, wherein at least one user-selectable action is configured to display a television program corresponding to the selected PIO using the interactive television system.

25

40. The method of claim 39, further comprising:  
locating a stored recording of the television program using an attribute of the  
selected PIO;  
displaying the stored recording of the television program.

5

41. A system for managing television programs received by an interactive  
television system, the system comprising:

a computer readable medium comprising, for each television program, a  
program interface object (PIO) comprising a plurality of attributes carrying  
10 information about the television program, a plurality of user-selectable actions  
performable by the interactive television system in connection with the television  
program, and a visual indicator displayable in a graphical user interface to facilitate  
user interaction with the PIO;

a display component configured to display one or more visual indicators  
15 corresponding to PIOs;

a selection component configured to receive a user selection of a visual  
indicator corresponding to a PIO and a user selection of an action associated with  
the selected PIO; and

an action component configured to execute the selected action within the  
20 interactive television system.

42. The system of claim 41, wherein the selection component is further  
configured to display, in response to a user selection of a visual indicator, a list of  
user-selectable actions associated with the selected PIO.

25

43. The system of claim 42, wherein the list is displayed in a context-sensitive menu associated with the visual indicator of the selected PIO.

44. The system of claim 41, further comprising a population component  
5 configured to filter an initial set of PIOs according to user-specified filtering criteria, wherein the display component is further configured to display the visual indicators of the PIOs satisfying the filtering criteria.

45. The system of claim 41, further comprising a communication  
10 component configured to receive at least one PIO from a remote system.

46. The system of claim 45, wherein the at least one PIO is received from the remote system via e-mail.

47. The system of claim 41, further comprising a communication  
15 component configured to transmit at least one PIO to a remote system in response to a user command.

48. The system of claim 41, wherein at least one visual indicator comprises  
20 one of a graphical icon, an animated image, a video clip, and a text description.

49. The system of claim 41, wherein at least one PIO includes an audible indicator, the system further comprising:

a playback component configured to play back the audible indicator.



50. The system of claim 41, wherein at least one user-selectable action comprises program code executable by the interactive television system in response to a user selection.

5 51. The system of claim 50, wherein the program code is substantially machine-independent.

52. The system of claim 51, wherein at least one PIO comprises one of a JavaBean object and a Distributed Component Object Model (DCOM) object.

10 53. The system of claim 41, wherein at least one attribute comprises a title of a television program.

15 54. The system of claim 41, wherein at least one attribute comprises a starting time of a television program.

55. The system of claim 41, wherein at least one attribute comprises a running time of a television program.

20 56. The system of claim 41, wherein at least one attribute comprises a description of a television program.

57. The system of claim 41, wherein at least one attribute comprises an indication of a channel on which a television program is broadcast.

25

58. The system of claim 41, wherein at least one attribute comprises a storage location of a television program.

59. The system of claim 41, wherein at least one attribute comprises an  
5 alternative language version of another attribute.

60. The system of claim 41, wherein the display component is further configured to display an attribute of the selected PIO using the interactive television system.

10

61. The system of claim 41, further comprising:  
a recording component configured to record a television program  
corresponding to the selected PIO using the interactive television system.

15

62. The system of claim 61, wherein the recording component is further configured to record the television program at a time indicated by an attribute of the selected PIO.

20

63. The system of claim 41, wherein the display component is further configured to display a television program corresponding to the selected PIO using the interactive television system.

64. The system of claim 63, further comprising:

a playback component configured to locate a stored recording of the television program using an attribute of the selected PIO, and display the stored recording of the television program.

- 5            65.    A method for managing television programs received by an interactive television system, the method comprising:
- providing, for each television program, a program interface object (PIO) comprising a plurality of attributes carrying information about the television program, a plurality of user-selectable actions performable by the interactive television system
- 10           in connection with the television program, and an icon displayable in a graphical user interface to facilitate user interaction with the PIO;
- filtering an initial set of PIOs according to user-specified filtering criteria;
- displaying the icons corresponding to the PIOs satisfying the filtering criteria;
- receiving a user selection of an icon corresponding to a PIO;
- 15           displaying a list of user-selectable actions associated with the selected PIO;
- receiving a user selection of an action associated with the selected PIO from the list; and
- executing the selected action within the interactive television system.

- 20           65.    A system for managing television programs received by an interactive television system, the method comprising:
- a computer-readable medium storing, for each television program, a program interface object (PIO) comprising a plurality of attributes carrying information about the television program, a plurality of user-selectable actions performable by the

interactive television system in connection with the television program, and an icon displayable in a graphical user interface to facilitate user interaction with the PIO;

a filtering component configured to filter an initial set of PIOs according to user-specified filtering criteria;

5 an icon display component configured to display the icons corresponding to the PIOs satisfying the filtering criteria;

an icon selection component configured to receive a user selection of an icon corresponding to a PIO;

an action display component configured to display a list of user-selectable actions associated with the selected PIO;

an action selection component configured to receive a user selection of an action associated with the selected PIO from the list; and

an action execution component configured to execute the selected action within the interactive television system.

15

66. A system for managing television programs received by an interactive television system, the system comprising:

means for storing, for each television program, a program interface object (PIO) comprising a plurality of attributes carrying information about the television program, a plurality of user-selectable actions performable by the interactive television system in connection with the television program, and a visual indicator displayable in a graphical user interface to facilitate user interaction with the PIO;

means for displaying one or more visual indicators corresponding to PIOs;

means for receiving a user selection of a visual indicator corresponding to a PIO and a user selection of an action associated with the selected PIO; and

25

means for executing the selected action within the interactive television system.